

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A multifunctional compound, expressed in and secreted by a mammalian host cell as a fully functional heterodimer of two polypeptide chains, wherein one of said polypeptide chains comprises the constant CH1-domain of an immunoglobulin heavy chain and the other polypeptide chain comprises the constant CL-domain of an immunoglobulin light chain, wherein said polypeptide chains of said multifunctional compound further comprise, fused to said constant domains, at least three polypeptide functional domains having different receptor or ligand functions, wherein at least one of said functional domains comprises a non-immunoglobulin portion having receptor or ligand function and at least one of said functional domains comprises an scFv-fragment, wherein further at least two of said different functional domains lack an intrinsic affinity for one another and wherein said polypeptide chains are linked via said immunoglobulin constant domains.

2. (Previously presented) The multifunctional compound of claim 1, wherein the functional domains having receptor or ligand function, are C-and/or N-terminally linked to one or both of said constant immunoglobulin domains.

3. (Cancelled)

4. (Previously presented) The multifunctional compound of claim 1, comprising four functional domains having receptor or ligand function.

5-6. (Cancelled)

7. (Previously presented) The multifunctional compound of claim 1, wherein at least one of said functional domains having receptor- or ligand function, is a T-cell costimulatory ligand, an scFv-fragment comprising an antigen binding region specific for a tumor associated antigen, or a proteinaceous compound providing the primary activation signal for T-cells.

8-18. (Cancelled)

19. (Previously presented) The multifunctional compound of claim 1, wherein said constant domain of an immunoglobulin light chain is of the κ type.

20. (Previously presented) The multifunctional compound of claim 1, wherein said immunoglobulin constant domains and said functional domains having receptor or ligand function are connected by a polypeptide linker.

21. (Previously presented) The multifunctional compound of claim 20, wherein said polypeptide linker comprises an Ig-hinge region or a plurality of glycine, alanine and/or serine.

22. (Previously presented) The multifunctional compound of claim 21, wherein said Ig-hinge region is an IgG hinge region.

23. (Previously presented) The multifunctional compound of claim 22, wherein the IgG hinge region is the upper hinge region of human IgG.

24-25. (Cancelled)

26. (Previously presented) The multifunctional compound of claim 1, wherein said CH1 domain is linked to a histidine tag, GST, Staphylococcus protein A, Lex A, a FLAG-tag or a MYC-tag.

27-41. (Cancelled)

42. (Withdrawn) The multifunctional compound of claim 7, wherein said antigen binding region specific for a tumor associated antigen comprises the VH and the VL regions of the human anti-human EpCAM antibody.

43. (Withdrawn) The multifunctional compound of claim 42, wherein said VH and VL regions of the human anti-human EpCAM antibody comprise the amino acid sequence of the human anti-human EpCAM antibody HD70 disclosed in Figure 55.

44. (Withdrawn) The multifunctional compound of claim 7, further wherein at least one of said functional domains comprising a non-immunoglobulin portion having receptor or ligand function, is an immunomodulating effector molecule or fragment thereof.

45. (Withdrawn) The multifunctional compound of claim 44, wherein said immuno-modulating effector molecule or said fragment thereof is selected from the group consisting of cytokines, chemokines, macrophage migration factor (MIF), T-cell receptors and soluble MHC molecules.

46. (Withdrawn) The multifunctional compound of claim 45, wherein said cytokines are selected from the group consisting of interleukins, interferons, GM-CSF, G-CSF, MCSF, TNFs and VEGF.

47. (Withdrawn) The multifunctional compound of claim 46, wherein said at least three functional domains having different receptor or ligand function, comprise at least one GM-CSF, at least one IL-2 and at least one scFv fragment comprising the VH and the VL regions of the human-anti-human EpCAM antibody HD70.

48. (Withdrawn) The multifunctional compound of claim 47 comprising four functional domains, said functional domains comprising one GM-CSF, one IL-2, and two scFv fragments comprising the VH and the VL regions of the human-anti-human EpCAM antibody HD70, wherein said GM-CSF and said IL-2 are each C-terminally linked to one of said constant CH1 or CL domains and wherein each said scFv fragment comprising the VH and the VL regions of said human anti-human EpCAM antibody HD70 is N-terminally linked to one of said constant CH1 or CL domains.

49. (Withdrawn) The multifunctional compound of claim 1, wherein said at least one scFv fragment comprises two scFv fragments, each scFv fragment comprising the VH and the VL regions of the human-anti-human EpCAM antibody HD70, and wherein said at least one non-immunoglobulin portion having receptor or ligand function comprises two immunomodulating effector molecule or fragments thereof comprising GM-CSF and IL-2, and further comprising at least one glycine-serine linker region, at least one upper hinge region IgG3 of human IgG, and at least one histidine tag, wherein said CL domain is C_κ, and further wherein each said GM-CSF and said IL-2 is C-terminally linked to each said constant domain through a said glycine-serine linker region, wherein each said scFv fragment is N-terminally linked to each said constant domain through a said upper hinge region IgG3 of human IgG, and said at least one histidine tag is C-terminally linked to said GM-CSF.

50. (Withdrawn) The multifunctional compound of claim 49, comprising four functional domains, wherein said polypeptide chain comprising said CH1 domain comprises a said VL region of said human anti-human EpCAM antibody HD70 N-terminally linked to a said VH region of said human anti-human EpCAM antibody HD70, wherein said VH region is N-terminally linked to a said upper hinge region IgG3 of human IgG, wherein said IgG3 region is N-terminally linked to said CH1 domain, and further wherein a said glycine-serine linker region is C-terminally linked to said CH1 domain, wherein said GM-CSF is C-terminally linked to said glycine-serine linker region, and said histidine tag is C-terminally linked to said GM-CSF, and said polypeptide chain comprising said C_κ domain comprises a said VL region of said human anti-human EpCAM antibody HD70 N-terminally linked to a said VH region of said human anti-human EpCAM antibody HD70, wherein said VH region

is N-terminally linked to a said upper hinge region IgG3 of human IgG, wherein said IgG3 region is N-terminally linked to said C_κ domain, and further wherein a said glycine-serine linker region is C-terminally linked to said C_κ domain, and said IL-2 C-terminally linked to said glycine-serine linker region.